Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

1-17. (Cancelled)

18. (Original) A method of impairment mitigation in a communication system comprising:

generating at least one error estimate of a signal;

determining a channel fidelity metric using the at least one error estimate;

generating a branch metric for a decoder;

modifying the branch metric based on the channel fidelity metric; and

decoding the signal using the modified branch metric.

19. (Original) The method of claim 18 wherein the decoder is a Viterbi decoder.

20. (Original) The method of claim 18 wherein modifying the branch metric comprises setting the branch metric to a low probability if the fidelity metric indicates a degraded channel.

21. (Previously Presented) A method of impairment mitigation in a communications system comprising:

generating at least one error estimate of a signal, wherein the signal comprises a sequence of symbols, and wherein a first portion of the sequence comprises at least one select symbol;

determining a channel fidelity metric using the at least one error estimate;

decoding the signal using the channel fidelity metric;

determining a first error estimate from the sequence of symbols;

determining a second error estimate from a second portion of the sequence of symbols including the at least one select symbol;

determining a third error estimate from a third portion of the sequence of symbols including the at least one select symbol;

comparing the first error estimate to a first predetermined threshold, and the second and third error estimates to a second predetermined threshold; and

erasing at least a portion of the at least one select symbol if the first error estimate is above the first predetermined threshold and if the second and third error estimate are above the second predetermined threshold.

22. (Previously Presented) A method of impairment mitigation in a communications system comprising:

generating at least one error estimate of a signal received from a channel, wherein the signal comprises a sequence of symbols, and wherein a first portion of the sequence comprises at least one select symbol;

determining if the channel is degraded based on the at least one error estimate;

erasing a select symbol of the signal if the channel is degraded;

decoding the signal;

determining a first error estimate from the sequence of symbols;

determining a second error estimate from a second portion of the sequence of symbols including the at least one select symbol;

determining a third error estimate from a third portion of the sequence of symbols including the at least one select symbol;

comparing the first error estimate to a first predetermined threshold, and the second and third error estimates to a second predetermined threshold; and

generating an indication that the channel is degraded if the first error estimate is above the first predetermined threshold and if the second and third error estimates are above the second predetermined threshold.

23. (Previously Presented) A method of impairment mitigation in a communications system comprising:

generating at least one error estimate of a signal;

determining a channel fidelity metric using the at least one error estimate;

decoding the signal using the channel fidelity metric;

storing the channel fidelity metric;

determining a transmit waveform using the stored fidelity metric; and

wherein the signal comprises one of at least one digital sample or at least one symbol.

24. (Previously Presented) A method of impairment mitigation in a communications system comprising:

generating at least one error estimate of a signal;

determining a channel fidelity metric using the at least one error estimate;

decoding the signal using the channel fidelity metric;

storing the channel fidelity metric;

selecting a receiver algorithm using the stored fidelity metric; and

wherein the signal comprises one of at least one digital sample or at least one symbol.

25. (Previously Presented) The method of claim 18 wherein the decoder is a Reed-Solomon decoder.

26. (Previously Presented) The method of claim 18 wherein the decoder is a Turbo decoder.

27. (Previously Presented) The method of claim 18 wherein the decoder is a Forward Error Correction (FEC) decoder.

28. (Previously Presented) The method of claim 18, wherein the signal comprises one of at least one digital sample and at least one symbol, further comprising:

storing the channel fidelity metric; and

determining a transmit waveform using the stored fidelity metric.

29. (Previously Presented) The method of claim 18, wherein the signal comprises one of at least one digital sample and at least one symbol, further comprising:

storing the channel fidelity metric; and

selecting a receiver algorithm using the stored fidelity metric.

30. (Previously Presented) The method of claim 18, wherein the signal comprises at least one symbol, and wherein generating at least one error estimate comprises:

determining at least one constellation point closest to the at least one symbol;

determining a distance between the at least one symbol and the at least one constellation point; and

squaring the distance.

31. (Previously Presented) The method of claim 18, wherein the signal comprises at least one symbol, and wherein determining a channel fidelity metric comprises:

comparing the at least one error estimate to at least one predetermined threshold.

32. (Previously Presented) The method of claim 31 further comprising generating a first indication if the at least one error estimate is above the at least one predetermined threshold and a second indication if the at least one error estimate is not above the at least one predetermined threshold.

33. (Previously Presented) The method of claim 31 comprising keeping a select symbol if the at least one error estimate is below the at least one predetermined threshold, and erasing the select symbol if the at least one error estimate is above the at least one threshold.

34. (Previously Presented) The method of claim 21 wherein the decoder is a Reed-Solomon decoder.

35. (Previously Presented) The method of claim 21 wherein the decoder is a Turbo decoder.

36. (Previously Presented) The method of claim 21 wherein the decoder is a Forward Error Correction (FEC) decoder.

37. (Previously Presented) The method of claim 22 wherein the decoder is a Reed-Solomon decoder.

38. (Previously Presented) The method of claim 22 wherein the decoder is a Turbo decoder.

39. (Previously Presented) The method of claim 22 wherein the decoder is a Forward Error Correction (FEC) decoder.

40. (Previously Presented) The method of claim 23 wherein the decoder is a Reed-Solomon decoder.

41. (Previously Presented) The method of claim 23 wherein the decoder is a Turbo decoder.

42. (Previously Presented) The method of claim 23 wherein the decoder is a Forward Error Correction (FEC) decoder.

43. (Previously Presented) The method of claim 24 wherein the decoder is a Reed-Solomon decoder.

44. (Previously Presented) The method of claim 24 wherein the decoder is a Turbo decoder.

45. (Previously Presented) The method of claim 24 wherein the decoder is a Forward Error Correction (FEC) decoder.